and a halide of Mg, in order to produce an olefinic polymer having porosity, expressed as the percentage of voids, greater than 5%;

(II) a treatment stage, wherein the product obtained in said first polymerization stage (I) is, in any order:

(a) optionally contacted with a compound capable of deactivating the catalyst used in stage (I); and

(b) contacted with a late transition metal complex, optionally in the presence of a suitable activating agent; and

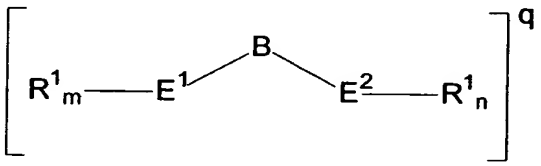
(III) a second polymerization stage, wherein one or more olefinic monomers are polymerized in one or more reactors, in the presence of the product obtained from stage (II).

10. (Amended) The multi-stage process according to claim 1 wherein, in the treatment stage (II)(b), said late transition metal complex has the formula (I) or (II):

$LMX_pX'_s$ (I) LMA (II)

wherein M is a metal belonging to Group 8, 9, 10 or 11 of the Periodic Table;

L is a bidentate or tridentate ligand of the formula (III):



(III)

wherein:

B is a C_1-C_{50} bridging group linking E^1 and E^2, optionally containing one or more atoms belonging to Groups 13-17 of the Periodic Table;

E^1 and E^2, the same or different from each other, are elements belonging to Group 15 or 16 of the Periodic Table and are bonded to said metal M;

the substituents R^1, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkylidene, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table of the Elements; or two R^1 substituents attached

to the same atom E^1 or E^2 form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms;

m and n are independently 0, 1 or 2, depending on the valence of E^1 and E^2, so as to satisfy the valence number of E^1 and E^2; q is the charge of the bidentate or tridentate ligand so that the oxidation state of $MX_pX'_s$ or MA is satisfied, and the compound (I) or (II) is overall neutral;

X, the same or different from each other, are monoanionic sigma ligands selected from the group consisting of hydrogen, halogen, -R, -OR, $-OSO_2CF_3$, -OCOR, -SR, $-NR_2$ and $-PR_2$ groups, wherein the R substituents are selected from the group consisting of linear or branched, saturated or unsaturated, C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table of the Elements (new IUPAC notation); or two X groups form a metallacycle ring containing from 3 to 20 carbon atoms;

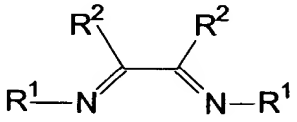
X' is a coordinating ligand selected from mono-olefins and neutral Lewis bases wherein the coordinating atom is N, P, O or S;

p is an integer from 0 to 3, so that the final compound (I) or (II) is overall neutral;

s is an integer from 0 to 3; and A is a π-allyl or a π-benzyl group.

13. (Amended) The multi-stage process according to claim 10, wherein the substituents R^1 are C_6-C_{20} aryl groups; the substituents X are selected from the group consisting of hydrogen, methyl, phenyl, Cl, Br and I; and p is an integer from 1 to 3.

14. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (V):



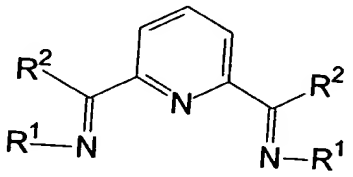
(V)

wherein R^1 has the meaning reported in claim 10; the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally

containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; M belongs to Group 10 of the Periodic Table; X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

15. (Amended) The multi-stage process according to claim 14, wherein the substituents R^1 are C_6-C_{20} aryl groups, optionally substituted in the 2 and 6 positions with at least one of (a) alkyl groups containing 1 to 20 carbon atoms and (b) halo groups; the substituents R^2 are selected from the group consisting of hydrogen, methyl, ethyl, n-propyl, i-propyl and benzyl, or the two substituents R^2 form together an acenaphthenequinone group.

16. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (VI):



(VI)

wherein the R^1 has the meaning reported in claim 10, the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; the metal M is Fe or Co; the X radicals are

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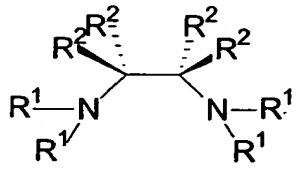
ected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

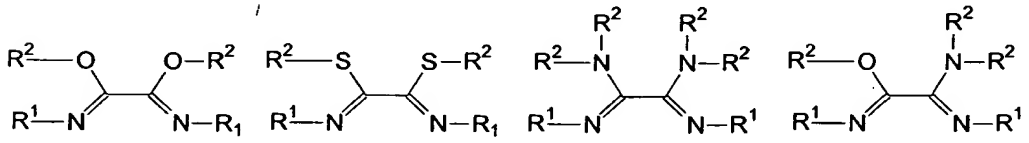
18. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (VII):



(VII)

wherein R^1 has the meaning reported in claim 1, the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; M belongs to group 10 of the Periodic Table, the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

19. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to one of formulae (VIII)-(XI):

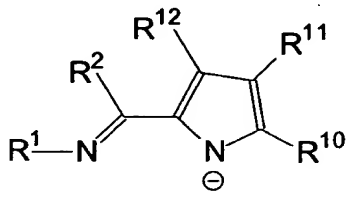


(VIII) (IX) (X) (XI)

wherein R^1 has the meaning reported in claim 10, the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally

containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; M belongs to Group 10 of the Periodic Table, the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

20. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XII):

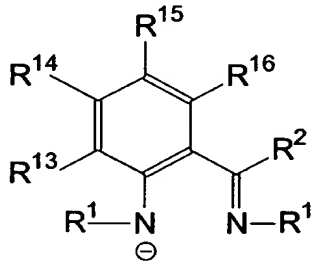


(XII)

wherein R^1 has the meaning reported in claim 10; the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; R^{10}-R^{12}, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to

groups 13-17 of the Periodic Table; or two adjacent substituents R^{10}-R^{12} form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 40 carbon atoms; the metal M is selected from the group consisting of Fe, Co, Rh, Ni and Pd; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

21. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XIII):

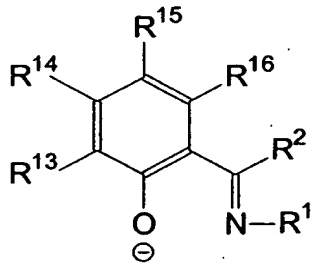


(XIII)

wherein R^1 has the meaning reported in claim 10; the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; the substituents R^{14} and R^{16}, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; the substituents R^{13} and R^{15}, the same or different from each other, have the same meaning as substituents R^{14} and R^{16}, optionally forming with an adjacent substituent R^{14} or R^{16} a

saturated, unsaturated or aromatic C_4-C_8 ring, or they are electron withdrawing groups; the metal M is selected from the group consisting of Fe, Co, Ni and Pd; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I; p is 2 or 3; and s is 0.

22. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XIV):



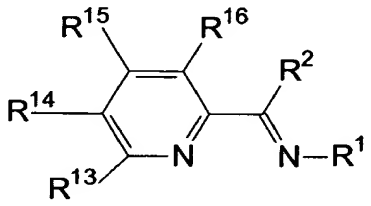
(XIV)

wherein R^1 has the meaning reported in claim 10; the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 element; R^{14} and R^{16}, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radical, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; R^{13} and R^{15}, the same or different from each other, have the same meaning as R^{14} and R^{16}, optionally forming with an adjacent R^{14} or R^{16} a saturated, unsaturated or aromatic C_4-C_8 ring, or they are electron withdrawing groups; the metal M belongs to Group 10 of the Periodic Table, the

X radicals are selected from the group consisting of hydrogen, methyl, allyl, Cl, Br and I, A is a C_3-C_5 linear allyl, p is 1 and s is 1.

23. (Amended) The multi-stage process according to claim 22 wherein, in said ligand of formula (XIV), R^1 is aryl, substituted in at least one of the 2, 6 and 4 positions with a substituent selected from the group consisting of halogen, linear or branched C_1-C_{20} alkyl groups, and a tertiary C_3-C_6 alkyl group; R^2 is hydrogen or methyl; R^{14} and R^{16} are selected from the group consisting of hydrogen, methyl and methoxy; R^{13} is selected from the group consisting of aryl, substituted in the 2 and 6 positions with branched C_3-C_{30} alkyl groups, a tertiary C_3-C_6 alkyl group, $-NO_2$ and halo; and R^{15} is selected from the group consisting of aryl, a tertiary C_3-C_6 alkyl group, $-NO_2$, halo, $-CF_3$, $-SO_3^-$, $-SO_2R$ and $-COO^-$.

24. (Amended) The multi-stage process according to claim 10, wherein said ligand L corresponds to formula (XV):



(XV)

wherein R^1 has the meaning reported in claim 10; the substituents R^2, the same or different from each other, are selected from the group consisting of hydrogen, linear or branched, saturated or unsaturated C_1-C_{20} alkyl, C_1-C_{20} alkoxy, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; or two R^2 substituents form a saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms, or they form a polycyclic ring system, optionally containing one or more Group 13-16 elements; a substituent R^1 and a substituent R^2 may form a substituted or unsubstituted, saturated, unsaturated or aromatic C_4-C_8 ring, having from 4 to 20 carbon atoms and optionally containing one or more Group 13-16 elements; the substituents R^{14} and R^{16}, the same or different from each other, are selected from the group consisting of hydrogen, linear or

branched, saturated or unsaturated C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} arylalkyl radicals, optionally containing one or more atoms belonging to groups 13-17 of the Periodic Table; the substituents R^{13} and R^{15}, the same or different from each other, have the same meaning as substituents R^{14} and R^{16}, optionally forming with an adjacent substituent R^{14} or R^{16} a saturated, unsaturated or aromatic C_4-C_8 ring, or they are electron withdrawing groups; the metal M belongs to Group 10 of the Periodic Table; the X radicals are selected from the group consisting of hydrogen, methyl, Cl, Br and I, p is 2 or 3, and s is 0.

25. (Amended) The multi-stage process according to claim 1 wherein, in the treatment stage (II)(b), said activating agent is at least one of (a) an alumoxane and (b) a compound able to form an alkylmetal cation.

31. (Amended) A catalyst component for the polymerization of olefins comprising a late transition metal complex supported on a polymeric porous support having a porosity, expressed as percentage of voids, greater than 5%, said catalyst component being obtained by a process comprising:

(I) a polymerization stage, wherein one or more olefins of the formula CH_2=CHR, wherein R is selected from the group consisting of hydrogen, a linear or branched, saturated or unsaturated C_1-C_{10} alkyl, a cycloalkyl and an aryl radical, in the presence of a catalyst comprising the product of the reaction between one or more alkyl-Al compounds and a solid component comprising at least one compound of a transition metal M^I chosen from Ti and V, and not containing M^I-π bonds, and a halide of Mg;

(II) a treatment stage, wherein the product obtained in the polymerization stage (I) is, in any order:

(a) optionally contacted with one or more compounds capable of deactivating the catalyst used in step (I); and

(b) contacted with one or more late transition metal complexes, optionally in the presence of a suitable activating agent.

32. (Amended) The catalyst component according to claim 30, wherein said late transition metal complex is supported in a quantity from $1 \cdot 10^{-7}$ to $1 \cdot 10^{-1}$ mmol per gram of polymeric porous support.

33. (Amended) The catalyst component according to claim 30, wherein said polymeric porous support has a porosity greater than 10%.

35. (Amended) A polymer composition obtained by the process of claim 1, characterized in that:

- in said first polymerization stage a homo or copolymer of propylene is obtained, having a content of propylene units greater than 80 wt. % and cold xylene soluble fractions less than 40 wt. %, said homo or copolymer of propylene consisting of 10-90 wt. % of the total amount of polymer; and
- in said second polymerization stage amorphous polyethylene is produced, having a number of total branching greater than 50 branches/1000 carbon atoms, a density from 0.830 to 0.880 g/cm^2, and a Tg value less than –30°C.

36. (Amended) A polymer composition obtained by the process of claim 1, characterized in that:

- in said first polymerization stage polyethylene, polypropylene or propylene/ethylene copolymer is produced, consisting of 10-90 wt. % of the total amount of polymer; and
- in said second polymerization stage block polyethylene is produced, having a melting point from 100 to 130°C and a Tg value less than –30°C.

37. (Amended) A polymer composition obtained by the process of claim 1, characterized in that:

- in said first polymerization stage, a copolymer of ethylene with one or more α-olefins (LLDPE) is obtained, having a content of ethylene units of 80-99 wt. %, said copolymer of ethylene consisting of 10-90 wt. % of the total amount of polymer;
- in the second polymerization stage, polyethylene is produced having a number of total branching greater than 5 branches/1000 carbon atoms and a density greater than 0.880 g/cm^3.

Add the following new claims:

38. (New) The catalyst component according to claim 31, wherein said late transition metal complex is supported in a quantity from 1.10^{-7} to 1.10^{-1} mmol per gram of polymeric porous support.

39. (New) The catalyst component according to claim 31, wherein said polymeric porous support has a porosity greater than 10%.

40. (New) The catalyst component according to claim 39, wherein said polymeric porous support has a porosity greater than 10%.